



Air Resources Board



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API 400E OZONE ANALYZER March 26, 2008

Issue

Several of the Teledyne-Advanced Pollution Instruments (API) model 400E ozone analyzers have experienced intermittent lamp stability failures. As a result, the analyzers display erratic and unusable ozone concentration values. Recycling power to the analyzer or replacing the photometer lamp is currently the only way to fix the problem.

Symptom

The instrument will display erratic and noisy ozone concentration values associated with a "Photo Ref Warning". In addition, the "O3 Ref" value displayed in the Test menu will be unstable.

Solution

API is aware of the problem and has recommended a firmware upgrade from version D.4 to version E.0. The API 400E tracks the stability of its O3 reference readings and the number of unstable readings per sample period. The new firmware (version E.0) allows the analyzer to recycle power to the photometer when a percentage of reference readings exceed a certain threshold. The firmware also raises the threshold for turning on the "Photo Ref Warning". Once the analyzer has recycled power due to photometer lamp instability and the lamp is stable, the timer and counter tracking the reference and stability readings are reset. API estimates the photometer lamp reset time to be approximately 1 minute.

The OSS Instrument Lab has received firmware version E.0 and procedures to upload firmware, save the old analyzer settings, and recalibrate the DAC's if necessary. The OSS Instrument Lab will coordinate the firmware upgrade with AQSB staff.

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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency